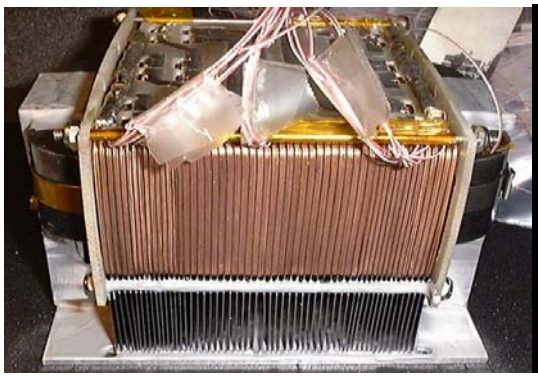
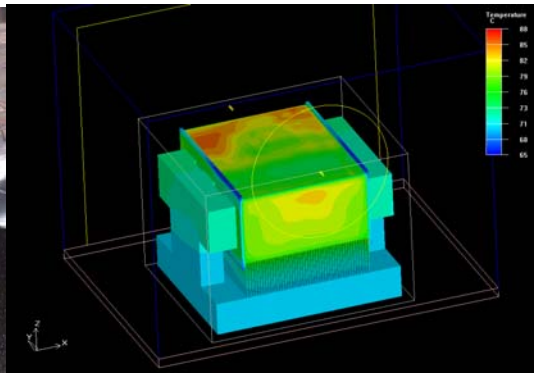
Electrical Power Cooling Technique





The Naval Research Laboratory (NRL) has developed a new passive cooling method know as the Novel Cooling Technique (NCT), a passive method for cooling the interior windings of power transformers and motors. Improved cooling is derived from the insertion of thin laminations of carbon, which can take three forms, i.e. fibers, pyrolytic graphite or natural graphite. Laminations are interleaved into the coil windings providing a direct thermal path from the interior of the coil to the exterior surface of the device. NCT provides a highly directional low impedance thermal path directly to ambient. Heat is wicked out of the interior of the coil structure dramatically lowering the internal coil temperature, extending the operational life and or increasing the power handling capabilities of the transformer or motor. Simply put, NCT shorts the internal heat to the external surface efficiently helping to pin the rho (ρ) of copper, thereby reducing the I^2R losses of the transformer or motor. (Ref US Patent # 6,259,347)

Advantages/Features Include:

- Improves the heat transfer coefficient of power transformers
- Removes I^2R power losses from the internal windings of transformers
- Can be integrated into many transformer designs to improve cooling
- Improves power density while maintaining low operating temperatures
- Allows optimal magnetic structures
- Reduces copper and core weight
- Reduces volumes
- Increases transformer life

Applications Include:

- Transformers, Generators and Motors

Licenses are available to companies with commercial interest.

Points of Contact

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